

Appl. No. 10/719,113
Arndt, Dated February 23, 2005
Reply to Office action of December 1, 2004

REMARKS/ARGUMENTS

This case has been carefully reviewed in light of Office Action dated December 1, 2004. In the Office Action, claims 1-24 were rejected under 35 USC 102(a) under Gebhardt et al. (US 6,492,817). Claims 1-24 remain pending in this application.

Claims define allowable subject matter over the applied art

Claims 1-24 were rejected under 35 USC 102(a) as being anticipated by Gebhardt et al (US Pat. No. 6,492,817). Applicant respectfully traverses the rejection of claims 1-14 under 35 USC 102(a). The present invention, as claimed in independent claims 1, 18, 19 and 24 are patentable over the Gebhardt reference. "Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 313 (Fed. Cir. 1983). The Gebhardt reference does not disclose each element of the present invention as claimed in independent claims 1, 6 and 13. Independent claims 1 and 18 each recite a matrix coil for generating a variable magnetic field. The matrix coil comprises a plurality of loops arranged in a series so as to have a substantially common axis with each of the plurality of loops being segmented into at least one arc-shaped segment. The matrix coil also includes a variable current source for each of the arc-shaped segments and a controller configured to selectively vary an amount of current provided to each of the arc-shaped segments by the variable current sources so as to achieve a variable base field, one or more variable gradient fields, and one or more variable second order shim fields. Independent claim 19 recites to a method of generating a variable magnetic field comprising supplying a current to each of a plurality of arc-shaped segments within each of a plurality of loops, the plurality of loops being arranged in a series so as to have a substantially common axis. The method further includes selectively varying the supplied current provided to each of the plurality of arc-shaped segments to achieve a variable base field, one or more variable gradient fields, and one or more variable second order shim fields. Claim 24 recites a magnetic resonance imaging (MRI) device comprising means for generating a variable base field, one or more variable gradient fields, and one or more variable second order shim fields. The MRI device further comprises means for supplying a current to the means for generating so as to achieve a target field for an imaging region of interest and means for determining a required current to achieve the target field for the imaging region of interest.

The Gebhardt reference does not teach or disclose each and every element of independent claims 1,18, 19 and 24. Specifically, the Gebhardt reference does not teach, suggest or disclose a variable current source coupled to each arc spaced segment. The Gebhardt reference is directed to an electrical conductor arrangement for a magnetic resonance apparatus, having a number of conductor meshes which are arranged in areas limiting lines defined by a network structure and a number of control devices electrically connected in the respective conductor meshes for generating respective currents in the conductor arrangement. Gebhardt does refer to a conductor arrangement composed of three conductor meshes insulated from one another, each of the conductor mesh containing a current source controllable independently from one another. Nowhere does the Gebhardt

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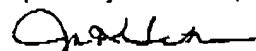
teach, suggest or disclose a variable current source for each of the arc-shaped segments and a controller configured to selectively vary an amount of current so as to achieve a variable base field, one or more variable gradient fields, and one or more variable second order shim fields as described in Applicants invention.

Therefore, the present invention, as claimed in independent claims 1, 18, 19 and 24 are not anticipated by the Gebhardt reference. Claims 2-17 depend directly or indirectly from claim 1, claims 20-23 depend directly or indirectly from claim 21. Accordingly, Applicants submit that claims 2-17 and 20-23 are allowable by dependency. Thus, it is respectfully requested that the rejection of claims 1-24 under 35 USC §102 (a) be withdrawn.

In view of the foregoing amendment and for the reasons set out above, Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are respectfully requested.

Should the Examiner believe that anything further is needed to place the application in condition for allowance, the Examiner is requested to contact Applicants' undersigned representative at the telephone number below.

Respectfully submitted,



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